

REMARKS

Section 103 Rejections (Chan ivo Iwasaki)

All claims were rejected as being unpatentable over Chan in view of Iwasaki or being unpatentable over Chan in view of Iwasaki and Bornhop or these references and others. Applicants request reconsideration.

All of the independent claims remaining in the application have been amended to even more clearly distinguish the present invention from any thing disclosed or suggested by Chan, Iwasaki or any of the other cited references.

Chan describes techniques for making measurements using surface enhanced Raman spectroscopy. Chan's technique requires a metal coating of his porous silicon to produce his "surface enhanced Raman spectroscopy" (SERS). He says in his abstract that "The metal coated substrate ... provides an extensive, metal rich environment for SERS, SERRS, hyper-Raman and/or CARS Raman spectroscopy." Applicants' sensor contains no metal coating on their porous silicon. Applicants' sensor as claimed operates on an entirely different principal.

Examiner has cited Bornhop for an example of a sensor monitoring interference fringes. Applicants' disagree that Bornhop combined with Chan and Iwasaki suggest the present invention. There is no suggestion in either of these references to suggest a combination and even if the teachings of these patents were combined they would not suggest the present invention as previously claimed. However Applicant has filed herewith an information disclosure statement listing US Patent No. 6,248,539 (Ghadiri) that was described in the background section of the present application (see numbered paragraph [0006] in the published version of the present application, Publication No. 2005/0019956).

The Ghadiri patent does describe techniques for producing interference fringes in light reflected from porous silicon, but this reference does not describe a sensor with fluid flow channels and fluid flow control elements as claimed. Applicants however suspect that Examiner would likely take the position that the present invention as previously claimed would be an obvious combination of Chan and Ghadiri. Therefore, Applicants have further limited all of the independent claims with limitations covering an important improved interference monitor that has greatly increased the resolution of Applicants invention. This improved interference monitor is described in detail beginning at paragraph [0092] in the published version of the present application. These improvements are referred to in paragraph

[0092] as "a key feature of the invention".

These additional limitations limit the interference monitor to an
"interference monitor comprising a deep well linear photodiode array of pixels each pixel having a photoelectron full well capacity of about 156 million photoelectrons or more and having a frame rate of about one hundred or more frames of interference fringe data per second"
and limit the computer program to a
"computer program comprising: a special correlation method for calculation of optical path differences from measured interference fringe patterns wherein each measured fringe pattern is correlated to a test fringe pattern".

These additional limitations are not described or suggested in any of the referenced prior art and are not described or suggested by Ghadiri. As described in the text in paragraph [0093], these improvements basically eliminate shot noise which is the primary noise source for these measurements by providing a signal to noise ratio of about 90,000.

Applicants have added dependent Claims 45 – 47 dependent on the amended Claim 1, claiming the interference monitor in further detail as described in paragraphs [0092] to [0097].

Conclusion

Since the present invention as claimed is not disclosed or suggested by the referenced prior art or, to the best of Applicants' knowledge, any other prior art, Applicants request that the outstanding claims (namely claims 1-5, 7-17, 21-26, 29-30 and 38-47 be allowed. Since generic claim 1 should be allowable for reasons given above, species claims 6, 18-20, and 27 that were withdrawn should also be allowable and Applicants request that they be allowed. So Applicants respectfully request, in accordance with Examiner's statements in his 6/15/2006 Office Action, that claims 1-30 and 38-47 be allowed and that the application be allowed to issue as a patent.

Respectfully submitted,



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